

Observations of Occultations of Stars and of Jupiter and his Satellites by the Moon and of Phenomena of Jupiter's Satellites made at the Royal Observatory, Greenwich, in the year 1896.

(Communicated by the Astronomer Royal.)

Day	Phenomenon.	Telescope.	Power.	Moon's Limb.	Mean Solar Time of Observation.			Observer.
					h	m	s	
Feb. 25	Disapp. W.B. (2) VII. 1457	Sheepshanks Equat.	100	Dark	7	57	29.69	D.
25	"	Astrographic Equat.	120	"	7	57	29.48	R. C.
25	"	Altazimuth	100	"	7	57	29.72	S.
Mar. 1	Reapp. Piazzi XII. 196	Sheepshanks Equat.	100	"	14	44	32.47	H.
19	Disapp. 18 Tauri	Altazimuth	100	"	7	41	35.19	D.
	"	Sheepshanks Equat.	120	"	7	41	33.26	H.
19	"	Finder of Astrographic Equat.	...	"	7	41	34.76	J.
27	" 79 Leonis	28-inch Equat.	670	"	9	57	47.50	L.
27	"	Sheepshanks Equat.	100	"	9	57	47.05	B.
27	"	Astrographic Equat.	225	"	9	57	47.45	D. E.
27	"	Altazimuth	100	"	9	57	47.55	S.
27 (a)	Reapp.	28-inch Equat.	670	Bright	10	55	0.45	L.
27 (b)	"	Transit Circle	195	"	10	54	59.23	B.
27	"	Astrographic Equat.	225	"	10	54	59.72	D. E.

Day.	Phenomenon.	Telescope.	Power.	Moon's Limb.	Mean Solar Time of Observation. h m s	Observer.
1896. Mar. 27	Reapp. 79 Leonis	Sheepshanks Equat.	100	Bright	10 54 59.49	S.
Apr. 26	Disapp. 83 Virginis	Astrographic Equat.	225	Dark	9 53 48.45	J.
26 (c)	Reapp. "	"	225	Bright	11 1 25.34	"
May 18	Disapp. W.B. (2) VIII. 1240	Sheepshanks Equat.	100	Dark	8 44 39.55	W. S.
21	"	"	100	"	10 46 9.92	A. C.
21	"	Altazimuth	100	"	10 46 10.31	S.
June 14 (d)	"	28-inch Equat.	670	"	9 40 47.19	D.
14	"	Sheepshanks Equat.	100	"	9 40 46.80	A. C.
14	"	Detached Tel., No. 2	75	"	9 40 47.86	B.
14	"	Altazimuth	60	"	9 40 (43.15)	C. D.
14	"	Astrographic Equat.	120	"	9 40 46.22	H. F.
14	"	28-inch Equat.	670	"	9 51 54.85	D.
14	Jupiter's 1st Limb	Corbett Tel.	100	"	9 51 57.35	L.
14	"	Sheepshanks Equat.	100	"	9 51 57.26	A. C.
14	"	Detached Tel., No. 2	75	"	9 52 (1.05)	B.
14 (c)	"	Altazimuth	100	"	9 51 59.30	C. D.
14	"	Astrographic Equat.	225	"	9 51 57.49	H. F.
14	"	28-inch Equat.	670	"	9 52 47.71	D.
14	Jupiter's 2nd Limb	Corbett Tel.	100	"	9 52 44.82	L.

Day.	Phenomenon.	Telescope.	Power.	Moon's Limb.	Mean Solar Time of Observation. h m s	Observer.
1896. June 14	Disapp. Jupiter's 2nd Limb	Sheepshanks Equat.	100	Dark	9 52 47.12	A. C.
14	"	Detached Tel., No. 2	75	"	9 52 47.93	B.
14	"	Altazimuth	100	"	9 52 45.96	C. D.
14	"	Astrographic Equat.	225	"	9 52 46.45	H. F.
14	Jupiter's Satellite I.	28-inch Equat.	670	"	9 54 57.36	D.
14	"	Corbett Tel.	100	"	9 54 56.36	L.
14	"	Sheepshanks Equat.	100	"	9 54 57.56	A. C.
14	"	Detached Tel., No. 2	75	"	9 55 (0.57)	B.
14	"	Astrographic Equat.	225	"	9 54 57.00	H. F.
14	Jupiter's Satellite II.	28-inch Equat.	670	"	9 55 32.96	D.
14	"	Corbett Tel.	100	"	9 55 34.26	L.
14	"	Sheepshanks Equat.	100	"	9 55 33.57	A. C.
14	"	Detached Tel., No. 2	75	"	9 55 34.48	B.
14	"	Altazimuth	60	"	9 55 32.71	C. D.
14	"	Astrographic Equat.	225	"	9 55 32.30	H. F.
14	Jupiter's Satellite III.	28-inch Equat.	670	"	9 57 56.56	D.
14	"	Corbett Tel.	100	"	9 57 57.10	L.
14	"	Sheepshanks Equat.	100	"	9 57 57.16	A. C.

Day.	Phenomenon.	Telescope.	Power.	Moon's Limb.	Mean Solar Time of Observation.	Observer.
1896.						
June 14	Disapp. Jupiter's Satellite III.	Altazimuth	60	Dark	h m s 9 57 56.81	C. D.
14	"	Astrographic Equat.	225	"	9 57 55.30	H. F.
22	" 4 Scorpii	Astrographic Equat.	120	"	8 57 3.46	C. D.
24	" Piazzi XVII. 359	"	120	"	11 56 8.51	"
July 20	Reapp. τ Scorpii	Sheepshanks Equat.	55	Bright	8 16 31.17	A. C.
28 (e)	Disapp. 21 Piscium	Astrographic Equat.	225	"	15 9 51.12	C. D.
28	Reapp. "	"	120	Dark	16 8 54.95	"
Oct. 1 (e)	Disapp. ϵ Cancri	Sheepshanks Equat.	100	Bright	16 40 0.47	W.
1 (e)	" 42 Cancri	"	100	"	16 47 7.31	"
22 (e)	" μ Arietis	Astrographic Equat.	225	"	7 45 29.15	H.
27	" 52 Geminorum	"	225	"	10 9 58.15	W. B.
Dec. 17	" η Tauri	Sheepshanks Equat.	100	Dark	4 13 41.59	H.
17 (e)	Reapp. 20 Tauri	"	100	Bright	4 17 54.80	"
17 (e)	" η Tauri	"	100	"	4 38 17.40	"

Notes.

(a) Observer noted that the observed time was probably late.

(b) The observed time has been increased by 5 seconds after consultation with the Observer, who was able to verify the alteration by remembering the position of the star at reappearance in the field at the Transit Circle, and to compare with the observed time of transit.

(c) Not considered a good observation.

(d) The disappearance of the satellite seemed to last about a second.

(e) Seemed to be at a slight distance from limb when first seen.

Phenomena of Jupiter's Satellites.

Day.	Satellite.	Phenomenon.	Telescope.	Power.	Mean Solar Time of Observation. h m s	Mean Solar Time of N.A. h m s	Observer.
1896.							
Jan. 17	I. (a)	Ecl. D. Began to fade	Altaz.	100	6 20 48		H. F.
17	I.	Bisection	"	"	6 22 43		"
17	I.	Last seen	"	"	6 24 18	6 22 51	"
22	I. (b)	Ecl. D. Began to fade	Sheepsh. Equat.	120	13 46 0		B.
22	I.	Bisection	"	"	13 47 24		"
22	I.	Last seen	"	"	13 48 34	13 48 28	"
29	III.	Ecl. R. First seen	"	"	7 45 36	7 43 25	H.
29	III.	Full brightness	"	"	7 48 36		"
Feb. 6	II.	Ecl. R. First seen	Astrographic Equat.	225	7 47 37	7 48 3	D. E.
11	II. (c)	Tr. Ing. First contact	Sheepsh. Equat.	120	11 25 5		B.
11	II.	Bisection	"	"	11 29 14	11 28 0	"
11	II.	Last contact	"	"	11 32 24		"
22	I.	Tr. Ing. First contact	"	200	12 30 2		H.
22	I.	Bisection	"	"	12 31 31	12 32 0	"
22	I.	Last contact	"	"	12 33 56		"
23	IV. (d)	Ecl. R. First seen	"	120	6 19 52	6 22 27	A. C.
23	IV.	Full brightness	"	"	6 23 17		"
25	I.	Ecl. R. First seen	Altaz.	100	7 9 18	7 8 17	D.

Day.	Satellite.	Phenomenon.	Telescope.	Power.	Mean Solar Time of Observation. h m s	Mean Solar Time of N.A. h m s	Observer.
1896. Mar. 1	I.	Ecl. R. First seen	Sheepsh. Equat.	120	14 34 34	14 34 34	H.
1	I.	Full brightness	"	"	14 36 30		"
10	I. (e)	Occ. D. First contact	"	200	7 36 5		"
10	I.	Bisection	"	"	7 39 0	7 41 0	"
10	I.	Last seen	"	"	7 40 54		"
16	II.	Ecl. R. First seen	"	120	10 2 47	10 2 46	B.
16	II.	Full brightness	"	"	10 4 49		"
19	III.	Occ. R. First seen	"	100	7 10 16		H.
19	III.	Bisection	"	"	7 11 56	7 15 0	"
19	III.	Last contact	"	"	7 13 16		"
19	I.	Ecl. R. First seen	"	"	7 22 32	7 22 31	"
19	I.	Full brightness	"	"	7 24 14		"
19	III.	Ecl. D. Last seen	"	"	8 10 51	8 9 38	"
19	III.	Ecl. R. First seen	"	"	11 42 3	11 41 42	"
19	III.	Full brightness	"	"	11 45 51		"
23	II.	Occ. D. First contact	"	"	7 25 48		"
23	II.	Bisection	"	"	7 28 3	7 28 0	"
23	II.	Last seen	"	"	7 30 47		"

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Day.	Satellite.	Phenomenon.	Telescope.	Power.	Mean Solar Time of Observation. h m s	Mean Solar Time of N.A. h m s	Observer.
1896. Mar. 25	I.	Tr. Ing. First contact	Sheepsh. Equat.	100	8 37 55	8 40 0	B.
25	I.	Bisection	"	"	8 41 40		"
25	I. (f)	Last contact	"	"	8 45 14		"
25	I. (g)	Tr. Egr. First contact	"	"	10 57 17	11 0 0	"
25	I.	Bisection	"	"	11 0 32		"
25	I.	Last contact	"	"	11 3 21		"
27	IV.	Occ. R. Last contact	28-inch Equat.	670	7 11 48	7 9 0	L.
27	IV. (h)	Ecl. D. Last seen	Sheepsh. Equat.	120	13 55 36	13 53 42	B.
30	II. (i)	Occ. D. First contact	"	"	9 53 50	9 57 0	A. C.
30	II.	Bisection	"	"	9 55 31		"
30	II.	Last seen	"	"	9 59 6		"
Apr. 1	I.	Tr. Ing. First contact	"	55	10 32 36	10 31 0	H. A.
	I.	Bisection	"	"	10 34 45		"
	I.	Last contact	"	"	10 37 20		"
2	I. (j)	Occ. D. Last seen	Sheepsh. Equat.	120	7 41 13	7 41 0	W.
2	III.	Occ. D. Bisection	"	"	11 7 55	11 6 0	"
2	III.	Last seen	"	"	11 9 9		"
2	I.	Ecl. R. First seen	"	"	11 13 24	11 13 14	"
2	I.	Full brightness	"	"	11 14 39		"

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Day.	Satellite.	Phenomenon.	Telescope.	Power.	Mean Solar Time of Observation. h m s	Mean Solar Time of N.A. h m s	Observer.
1896. Apr. 3	I.	Tr. Egr. Last contact	28-inch Equat.	670	7 21 46	7 19 0	L.
10	I.	Tr. Egr. First contact	Sheepsh. Equat.	55	9 10 10		H. F.
10	I.	Bisection	"	"	9 12 19	9 12 0	"
10	I.	Last contact	"	"	9 14 59		"
13	IV.	Ecl. D. Began to fade	"	120	7 47 3		H.
13	IV.	Last seen	"	"	7 59 56	7 56 58	"
13	III.	Tr. Egr. First contact	"	"	8 34 46		H.
13	III.	Bisection	"	"	8 37 40	8 39 0	"
13	III.	Last contact	"	"	8 42 29		"
15	II.	Tr. Ing. First contact	28-inch Equat.	670	9 18 24		D.
15	II.	Bisection	"	"	9 21 4	9 23 0	"
15	II.	Last contact	"	"	9 23 20		"
15	II.	Tr. Ing. First contact	Corbett Telescope	100	9 15 49		C.
15	II.	Bisection	"	"	9 20 50	9 23 0	"
15	II.	Last contact	"	"	9 23 20		"
17	I. (k)	Tr. Ing. First contact	Sheepsh. Equat.	120	8 43 44		H.
17	I.	Bisection	"	"	8 46 44	8 46 0	"
17	I.	Last contact	"	"	8 49 28		"
17	II. (l)	Ecl. R. First seen	"	"	9 40 52	9 40 31	"

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Day.	Satellite.	Phenomenon.	Telescope.	Power.	Mean Solar Time of Observation. h m s	Mean Solar Time of N.A. h m s	Observer.
1896. Apr. 17	II.	Full brightness	Sheepsh. Eqat.	120	9 44 49		H.
17	I.	Tr. Egr. First contact	"	"	11 5 6	11 6 0	"
17	I.	Bisection	"	"	11 7 35		"
17	I.	Last contact	"	"	11 10 20		"
May 11	I.	Ecl. R. First seen	"	"	9 48 18	9 48 14	B.
19	II. (m)	Ecl. R. First seen	"	55	9 17 1	9 16 55	D. E.
19	II.	Full brightness	"	"	9 18 16		"

Notes.

- (a) *Jupiter* very ill-defined. (b) Definition of limb not very good. (c) Rough. (d) Twilight. Probably a little late.
(e) Clouds passing, but considered a good observation. (f) Cloudy. (g) Cloudy. (h) Sky hazy. *Jupiter* low down.
(i) Cloudy. (j) Very cloudy. (k) Clouds passing.
(l) The first time may be late. The planet was occasionally dimmed by clouds, and the reappearance was suspected about a minute before.
(m) Cloudy.

The aperture of the 28-inch equatorial is 28 inches; of the Astrographic Guiding Telescope, 10 inches (referred to as Astrographic Equatorial); of the Sheepshanks Equatorial, 6.7 inches; of the Corbett Telescope, 6.5 inches; of the Transit Circle, 8 inches; of the Altazimuth, 4 inches; of Detached Telescope No. 2, 2.7 inches; and of the Finder of the Astrographic Equatorial, 2 inches.

The initials D., C., L., H., A. C., B., H. F., C. D., R. C., D. E., W. B., J., S. W., and W. S. are those of Mr. Dyson, Mr. Cowell, Mr. Lewis, Mr. Hollis, Mr. Crommelin, Mr. Bryant, Mr. Furner, Mr. Davidson, Mr. Cheeseman, Mr. Edney, Mr. Bowyer, Mr. Johns, Mr. Witchell, and Mr. Stevens respectively.

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